Fetal Alcohol Syndrome

Fetal Alcohol Syndrome (FAS) and other alcohol related birth defects refer to a group of physical and mental birth defects resulting from a woman drinking alcohol during pregnancy.

Four primary diagnostic criteria indicate full Fetal Alcohol Syndrome:

- Growth deficiencies - stunted prenatal and/or postnatal growth.
- Permanent brain damage resulting in neurological abnormalities, delay in development, intellectual impairment, learning/behavior disorders.
- Abnormal facial features: short eye openings, short nose, flat mid-face, thin upper lip, small chin.
- Maternal alcohol use during pregnancy.

Some but not all of the primary diagnostic criteria for FAS can lead to such diagnoses as:

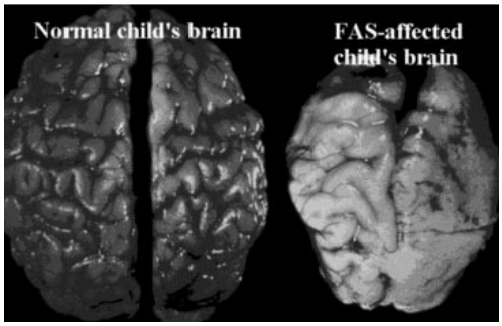
- Fetal Alcohol Effect (FAE)
- Alcohol Related Neurodevelopmental Disorder (ARND)
- Fetal Alcohol Related Conditions (FARC)
- Alcohol Related Birth Defects (ARBD)

Alcohol is a teratogen that affects whatever is developing in her fetus when a pregnant woman drinks. Whether or not her child has the specific physical characteristics of FAS simply depends on when and how much the mother drank alcohol. However, the brain is developing throughout gestation, and prenatal exposure to alcohol at any time during pregnancy can alter the development of the baby's brain.

Prenatal exposure to alcohol causes an "invisible disability" that manifests behaviorally. Many children have the brain damage without all of the physical dysmorphology of full FAS, which reminds others of their disability.

How Prenatal Alcohol Exposure Affects Development of the Brain

The most common effect is permanent brain damage causing learning disabilities, behavior problems, memory deficits, attention deficit hyperactive disorder, and/or mental retardation. This unchanging damage to the brain is called "static encephalopathy."



Alcohol exposure can cause devastating effects as seen in the photo. More subtle damage from occasional binge drinking can cause damage that is like buck shot - scattered holes in the brain that affect whatever area happened to be developing at the time, causing death of brain cells, migration of cells to the wrong place, or tangles in the neurons with incorrect or incomplete connections.

Regions of the brain most affected by prenatal alcohol exposure:

- Corpus Callosum - processes information between right brain and left brain
- Cerebellum - motor control
- Basal Ganglia - processes memory
- Hippocampus - learning and memory
- Frontal lobes - executive functions, impulse control, judgment

The frontal lobes control "Executive Functions" (EFs) (prefrontal cortex):

Executive Functions:	Alcohol Effects:
inhibitions	socially inappropriate behavior, as if inebriated
planning	inability to apply consequences from past actions
time perception	difficulty with abstract concepts or time and money
internal ordering	difficulty processing information
working memory	storing and/or retrieving information
self-monitoring	needs frequent cues, requires "policing" by others
verbal self-regulation	needs to talk to self out loud, needs feedback
motor control	fine motor skills more affected than gross motor skills
regulation of emotion	moody "roller coaster" emotions, exaggerated
motivation	apparent lack of remorse, need external motivators

Babies with FAS have many (but not always all) of the following physical characteristics:

- Small birth weight
- Small head circumference
- Epicanthal folds
- Small, widely spaced eyes
- Flat midface
- Short, upturned nose
- Smooth, wide philtrum
- Thin upper lip
- Underdeveloped jaw

Note: Facial characteristics may not be as apparent immediately after birth or during adolescence or adulthood as they are between the ages of two and ten.

Primary Characteristics

The following neuro-developmental characteristics are commonly associated with FAS/E. No particular one or two are necessarily diagnostically significant; may overlap characteristics of other diagnoses, e.g., ADD, AD/HD, learning disabilities, and others. Typical primary characteristics in children, adolescents, and adults include:

- Attention deficits- impulsiveness, distractibility, disorganization, poor impulse control
- Hyperactivity
- Inconsistent performance
- Memory deficits- difficulty storing and retrieving information
- Cognitive processing deficits (may think more slowly)
- Ability to repeat instructions, but inability to put them into action
- Difficulty with abstract concepts (math, time, money)
- Poor problem solving skills
- Poor judgment- inability to predict outcomes, or understand consequences, difficulty learning from consequences
- Slow auditory pace (may only understand every third word of normally paced conversation)
- Developmental lags (may act younger than chronological age)

Note: These symptoms are not "behavior problems" but are a result of permanent, unchanging damage to the brain (static encephalopathy) and are not within the child's control.

Common Strengths

Many people with FAS/FAE have strengths that mask their cognitive challenges.

- Highly verbal
- Bright in some areas
- Artistic, musical, mechanical
- Athletic
- Friendly, outgoing, affectionate
- Determined, persistent
- Willing
- Helpful
- Generous
- Good with younger children

Timelines and FAS/FAE

Most children with FAS have developmental delays and some have lower than normal IQ. The degree of physiological characteristics usually corresponds with the degree of developmental delays. Most children with FAS have IQs that are legally considered in the "normal" range.

People with FAS/FAE may present a complex portrait of competencies and delays. It is not uncommon to encounter a mix of abilities and lags in any one person. The profile of maturation and strengths varies significantly between people with FAS/FAE. This chart is intended to provide a visual cue for gaps that may be masked by abilities (i.e., emotional immaturity may be hidden by strong expressive language skills.)

Actual age of individual: 18

Skill
Developmental Age Equivalent

Expressive
Language==========> 20

Comprehension ==========> 6

Money, time concepts ========> 8

Emotional maturity ========> 6

Physical maturity
==========> 18

Reading ability==========> 16

Social skills ==========> 7

Living skills ==========> 11

Chronological
age ========> 0 5 10 15 20 25

A gradual catch up is noted in young adults with FAS/FAE. Rather than being able to leave home at 18, a more realistic timeline may be 25 to 30. Ask yourself what responsibilities would be reasonable to expect from a 10 year old when confronted by a tall, verbal 16 year old with FAS/FAE. Adjust expectations

Preventable Secondary Characteristics

Adults with FAS often have difficulty maintaining successful independence without appropriate supports. They have trouble staying in school, keeping jobs, or sustaining healthy relationships.
These secondary characteristics are believed to be preventable with appropriate supports.

- Fatigue, tantrums
- Irritability, frustration, anger, aggression
- Fear, anxiety, avoidance, withdrawal
- Shut down, lying, running away
- Trouble at home, school, and community
- Legal trouble
- Drug/Alcohol abuse
- Mental health problems (depression, self injury, suicidal tendencies)
- Unwanted pregnancies

Children and adults with FAS are also quite vulnerable to physical, sexual, and emotional abuse.

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